

REMARKS

Reconsideration and allowance of the present application based on the foregoing amendment and following remarks are respectfully requested. Since this Amendment is being presented together with a Request for Continued Examination, entry of this Amendment is respectfully requested.

Applicant appreciates the courtesies extended by Examiner Dickey and Primary Examiner Tran to Applicant's representative at the October 6, 2004 interview (hereinafter the "Interview"). The substance of the interview is incorporated into the remarks below and constitutes Applicant's record of the interview.

By this Amendment, claim 1 is amended, claims 43-46 are cancelled without prejudice or disclaimer to the subject matter therein as being directed to a non-elected invention, and claims 47 and 48 are newly added. Support for the amendment to claim 1 may be found, for example, on page 10, lines 14-15 of the present application. New claims 47 and 48 correspond to claims 7 and 8, rewritten in independent form, including the limitations of claim 1 before presentation of the amendments incorporated herein. As claims 7 and 8 were indicated as allowable if rewritten in independent form, it is respectfully submitted that claims 43 and 44 are allowable. After entry of this Amendment, claims 1-11, and 47-48 will remain pending in the application.

Claims 1, 4, 5, 6, and 11 were rejected under 35 U.S.C. §102(b) based on Yazawa *et al.* (U.S. Pat. No. 4,819,043) (hereinafter "Yazawa"). The rejection is respectfully traversed.

Claim 1 is patentable over Yazawa at least because this claim recites a semiconductor device comprising, *inter alia*, a first impurity doped layer of a first conductivity type and a channel region laterally residing at a location immediately beneath the gate electrode, the channel region being formed in the first impurity doped layer of the first conductivity type between the source/drain diffusion layers. As conceded by the Examiner during the Interview, Yazawa does not teach or suggest this feature. Therefore, Yazawa does not teach or suggest each and every element recited by claim 1 and, as a result, cannot anticipate claim 1.

In contrast to claim 1, Yazawa discloses a device including a P-type layer 7 and an N-type layer 6 formed on a substrate 1. (See FIGS. 7-8 and col. 5, lines 20-27). Yazawa discloses that the P-type layer 7 is opposite in conductivity type to the source and the drain and that the N-type layer 6 is of the same conductivity type to the source and the drain. *Id.* As mentioned during the Interview, Yazawa discloses that in the OFF-state, the depletion

layers of each junction (corresponding to layers 7-8 and 8-1) overlap each other so that no current can flow from the source to the drain. (See FIG. 8). By contrast, in the ON-state a voltage is applied to the gate to contract the depletion regions so as to form a channel in layer 6. (See col. 6, lines 18-20). This mode of operation is also shown in FIG. 4 and col. 2, lines 10-58. As explained during the Interview, the mode of operation of the device shown in FIG. 4 is the same as that of FIG. 8, except that the embodiment shown in FIG. 8 has been designed to have a greater effective channel length L_{oe} . (See col. 6, lines 4-17). Clearly, Yazawa does not teach or suggest a channel region formed in the first layer 7.

In fact, Applicant respectfully submits that Yazawa teaches away from this feature. Yazawa indicates that creation of the channel at a location immediately beneath the gate oxide 2, i.e. in layer 7, is prejudicial. Yazawa teaches, for example, that such a configuration could deteriorate the gate oxide 2 because high-energy carriers could enter the gate oxide 2. (See col. 1, lines 60-68, and col. 6, lines 24-28).

Claims 4, 5, 6 and 11 are patentable by virtue of their dependency from claim 1 and for the additional features recited therein.

Accordingly, reconsideration and withdrawal of the rejection of claims 1, 4, 5, 6 and 11 under 35 U.S.C. §103(a) based on Yazawa are respectfully requested.

Claims 2 and 3 were rejected under 35 U.S.C. §103(a) based on Yazawa. The rejection is respectfully traversed.

Claims 2 and 3 depend from claim 1 and are therefore patentable for at least the same reasons provided above with respect to claim 1 and for the additional features recited therein. In that regard, it is respectfully submitted that claims 2 and 3 are at least patentable because they each recite a semiconductor device comprising, *inter alia*, a first impurity doped layer of a first conductivity type and a channel region laterally residing at a location immediately beneath the gate electrode, the channel region being formed in the first impurity doped layer of the first conductivity type between the source/drain diffusion layers. Furthermore, as explained before, Yazawa teaches away from such a feature.

Accordingly, reconsideration and withdrawal of the rejection of claims 2 and 3 under 35 U.S.C. §103(a) based on Yazawa are respectfully requested.

Claims 9 and 10 were rejected under 35 U.S.C. §103(a) based on Yazawa in view of Cheek *et al.* (U.S. Pat. No. 6, 162,694). The rejection is respectfully traversed.

Claims 9 and 10 depend from claim 1 and are, therefore, patentable over Yazawa for at least the same reasons provided above related to claim 1 and for the additional features recited therein.

As conceded by the Examiner during the Interview, Cheek does not remedy the deficiency of Yazawa. Therefore, the combination of Yazawa and Cheek cannot result, in any way, in the invention of claims 9 and 10. Therefore, claims 9 and 10 are allowable.

Furthermore, Applicant notes that in order to establish a *prima facie* case of obviousness, there must be some motivation or suggestion to combine the references. (See MPEP 2143). In the present case, there is no motivation or suggestion to combine the references because Yazawa clearly teaches away from the subject matter disclosed in Cheek. As mentioned previously, Yazawa teaches away from a channel formed in the layer proximate the gate oxide because this configuration, according to Yazawa, potentially affects reliability of the device. Because in Cheek, the channel region is formed in a region proximate the gate oxide (See col. 1, lines 26-28), there cannot be any motivation or suggestion to modify Yazawa in view of the teachings of Cheek.


Accordingly, reconsideration and withdrawal of the rejection of claims 9 and 10 under 35 U.S.C. §103(a) based on Yazawa in view of Cheek are respectfully requested.

With respect to claims 7 and 8, they remain dependent upon amended claim 1. Since claims 7 and 8 were considered previously to be allowable, Applicant respectfully submits that claims 7 and 8 continue to be allowable.

Applicant has addressed all the Examiner's rejections and objections and respectfully submits that the application is in condition for allowance. A notice to the effect is earnestly solicited.

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Respectfully submitted,
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